



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference JKH/P102834PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA416)	
International application No. PCT/GB 03/04082	International filing date (day/month/year) 15.09.2003	Priority date (day/month/year) 10.10.2002
International Patent Classification (IPC) or both national classification and IPC A61N5/04		
Applicant MICROSULIS LIMITED et al.		

- This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  10.05.2004	Date of completion of this report  12.11.2004
Name and mailing address of the International preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Artikis, T  Telephone No. +49 89 2399-7923  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/04082**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

2-9 as originally filed  
1 received on 22.10.2004 with letter of 19.10.2004

**Claims, Numbers**

1-18 received on 22.10.2004 with letter of 19.10.2004

**Drawings, Sheets**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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- 5 ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 12-18

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 12-28

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/04082

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. No examination will be carried out in respect of claims 12 to 18, because they are original claims 13-19 which have not been searched (see Art. 17(2)(a) or (3) PCT, Rule 66.1(e) PCT and the international search report).

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

2. Reference is made to the following documents:

D1: US-A-4 446 874 (VAGUINE VICTOR A) 8 May 1984 (1984-05-08)

D3: EP-A-0 294 854 (UNIV GLASGOW) 14 December 1988 (1988-12-14)

3. INDEPENDENT CLAIM 1

- 3.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document) a microwave applicator (see abstract, lines 1-3) comprising:

- a coaxial electrical input (see col. 7, lines 49-51 and figure 4 (132));
- a waveguide filled with dielectric (see col. 5, lines 25-27 and 50-53); and
- an inner conductor of the coaxial input extending longitudinally within one end of the waveguide (see col. 7, lines 45-60 and figure 4).

The subject-matter of claim 1 differs from D1 in that microwaves in the  $TM_{01}$  are launched. The subject-matter of claim 1 is therefore novel (Article 33(2) PCT).

- 3.2. The problem to be solved by the present invention may be regarded as how to select the mode of the microwaves.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The apparatuses disclosed in D1 explicitly operate in the  $TE_{01}$  or the  $TE_{11}$  mode

depending on whether a rectangular or a cylindrical waveguide is used (see col. 6, lines 41-49). Therefore, the person skilled in the art would not even consider modifying these known apparatuses in order to make them launch microwaves in the  $TM_{01}$  mode.

Furthermore, document D3, which is the only available prior art document referring to the  $TM_{01}$  mode of propagation, discloses (see abstract and figure 8) a microwave thermography apparatus comprising a cylindrical waveguide capable of supporting both the  $TE_{11}$  and the  $TM_{01}$  mode and a mode transformer in the shape of a rod in order to block the  $TM_{01}$  mode and thus leave the  $TE_{11}$  mode only.

Consequently, the subject-matter of claim 1 involves an inventive step (Art. 33(3) EPC).

**4. CLAIMS 2-8**

Claims 2-8 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

**5. CLAIMS 9-11**

Claim 9 comprises all the features of claim 1 and is therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT). Consequently, claim 9 also meets the requirements of the PCT with respect to novelty and inventive step.

The same applies to claims 10-11, which are dependent on claim 9 and thus on claim also.